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AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116

Serial Number: 10/656,652

Filing Date: September 4, 2003

Title: METHOD, SYSTEM, AND PROGRAM FOR MANAGING A SPEED AT WHICH DATA IS TRANSMITTED BETWEEN NETWORK ADAPTORS

Page 2
Dkt: P14969IN THE CLAIMS

Please amend the claims as follows:

1. (Previously Presented) A method comprising:
selectively determining a new transmission speed different from a current transmission speed between a local network device and a linked network device in response to a speed change event; and
transmitting a speed change request and the new transmission speed to the linked network device to request the local and linked network devices to communicate at the new transmission speed, wherein the transmitting occurs while maintaining a linked exchange between the local and linked network devices.
2. (Original) The method of claim 1, wherein transmitting the speed change request comprises including the speed change request and the new transmission speed in a data packet being transmitted to the linked network device at the current transmission speed.
3. (Original) The method of claim 1, wherein transmitting the speed change request comprises including the speed change request and the new transmission speed in a preamble packet that is transmitted at the beginning of data packets or in an idle transmission between packets to synchronize data transmissions at the current transmission speed.
4. (Original) The method of claim 1, wherein the linked network device in response to the speed change request returns positive acknowledgment to the local network device if the linked network device is capable of transmitting at the new transmission speed.
5. (Original) The method of claim 4, wherein the local and linked network devices continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment.

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6. (Original) The method of claim 1, wherein the linked network device in response to the speed change request returns negative acknowledgment to the local network device if the linked network device is not capable of transmitting at the new transmission speed.

7. (Previously Presented) The method of claim 1, wherein the operation to change the transmission speed comprises an operation to either:

increase the transmission speed if the local network device is capable of transmitting at a transmission speed that is higher than the current transmission speed; or

decrease the transmission speed if the local network device is capable of transmitting at a transmission speed that is lower than the current transmission speed.

8. (Original) The method of claim 1, further comprising: maintaining transmission information indicating transmission capabilities of the linked network device, wherein the determined new transmission speed is a new transmission speed that the transmission information indicates that the linked network device is capable of performing.

9. (Previously Presented) The method of claim 1, further comprising setting a register in the local network device to indicate the new transmission speed, wherein a device driver used to communicate with the local network device determines the new transmission speed, wherein setting the register in the local network device comprises the device driver changing advertised capabilities of the local network device indicated in the register, and wherein transmitting the speed change request comprises restarting an auto-negotiation process that selects a common transmission speed based on the changed advertised capabilities in the local network device.

10. (Original) The method of claim 9, wherein the determined new transmission speed is higher than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are less than the determined new transmission speed.

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11. (Original) The method of claim 9, wherein the determined new transmission speed is lower than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are higher than the determined new transmission speed.

12. (Original) The method of claim 1, wherein the speed change event comprises an application program determining an anticipated increase of data transmissions through the local network device, and wherein the new transmission speed is higher than the current transmission speed.

13. (Previously Presented) The method of claim 1, wherein the speed change event is based on a detected change in network traffic at the local network device.

14. (Previously Presented) A network device comprising:

(i) logic to initiate an operation to change a current transmission speed at which data is transmitted to a linked network device in response to a speed change event;

(ii) logic to determine a new transmission speed different from a current transmission speed between the network device and the linked network device; and

(iii) logic to transmit a speed change request and the new transmission speed to the linked network device to request the linked network device to communicate at the new transmission speed, wherein the transmission occurs while maintaining a linked exchange between the network device and the linked network device.

15. (Previously Presented) The network device of claim 14, wherein the linked network device in response to the speed change request, returns positive acknowledgment to the network device if the linked network device is capable of transmitting at the new transmission speed.

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16. (Previously Presented) The network device of claim 15, wherein the network device and the linked network device continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment.

17. (Previously Presented) The network device of claim 14, wherein the linked network device in response to the speed change request, returns negative acknowledgment to the network device if the linked network device is not capable of transmitting at the new transmission speed.

18. (Previously Presented) The network device of claim 14, further comprising logic to:

increase the transmission speed if the network device is capable of transmitting at a transmission speed that is higher than the current transmission speed; or

decrease the transmission speed if the network device is capable of transmitting at a transmission speed that is lower than the current transmission speed.

19. (Previously Presented) The network device of claim 14, further comprising logic to maintain transmission information indicating transmission capabilities of the linked network device, wherein the determined new transmission speed is a new transmission speed that the transmission information indicates that the linked network device is capable of performing.

20. (Previously Presented) The network device of claim 14, wherein the speed change event is based on a detected change in network traffic at the network device.

21. (Previously Presented) A computer system capable of communicating over a network with a device including a linked network device, comprising:

a processing unit;

a storage device;

a storage controller to manage Input/Output (I/O) access to the storage device;

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a network device capable of receiving data from the processing unit and communicating with the linked network device over the network, the network device comprising:

(a) logic to initiate an operation to change a current transmission speed at which data is transmitted to the linked network device in response to a speed change event;

(b) logic to determine a new transmission speed different from the current transmission speed; and

(c) logic to transmit a speed change request and the new transmission speed to the linked network device to request the linked network device to communicate at the new transmission speed, wherein the transmission occurs while maintaining a linked exchange between the network device and the linked network device.

22. (Previously Presented) The computer system of claim 21, wherein the network device further comprises:

logic to set a register to indicate the new transmission speed and wherein the computer system further comprises logic to communicate with the network device to determine the new transmission speed, wherein the logic to set the register comprises logic to change advertised capabilities of the network device indicated in the register, and wherein the logic to transmit the speed change request comprises logic to restart an auto-negotiation process that selects a common transmission speed based on the changed advertised capabilities in the network device.

23. (Previously Presented) A storage device to store code capable of causing operations in a local network device, the operations comprising:

determining a new transmission speed different from a current transmission speed; and

transmitting a speed change request and the new transmission speed to the linked network device to request the local and linked network devices to communicate at the new

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transmission speed, wherein the transmitting occurs while maintaining a linked exchange between the local and linked network devices.

24. (Previously Presented) The storage device of claim 23, wherein the code causes the local network device to include the speed change request and the new transmission speed in a data packet being transmitted to the linked network device at the current transmission speed.

25. (Previously Presented) The storage device of claim 23, wherein the code causes the local network device to include the speed change request and the new transmission speed in a preamble packet that is transmitted to the linked network device at the beginning of data packets or in an idle transmission between packets to synchronize data transmissions at the current transmission speed.

26. (Previously Presented) The storage device of claim 23, wherein the linked network device is to return, in response to the speed change request, positive acknowledgment to the local network device if the linked network device is capable of transmitting at the new transmission speed.

27. (Previously Presented) The storage device of claim 26, wherein the code causes the local and linked network devices to continue to transmit data at the current transmission speed until the linked network device returns a positive acknowledgment.

28. (Previously Presented) The storage device of claim 23, wherein the linked network device is to return negative acknowledgment to the local network device, in response to the speed change request, if the linked network device is not capable of transmitting at the new transmission speed.

29. (Previously Presented) The storage device of claim 23, wherein the code causes the local network device to either:

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increase the transmission speed if the local network device is capable of transmitting at a transmission speed that is higher than the current transmission speed; or
decrease the transmission speed if the local network device is capable of transmitting at a transmission speed that is lower than the current transmission speed.

30. (Previously Presented) The storage device of claim 23, wherein the code causes the local network device to:

maintain transmission information indicating transmission capabilities of the linked network device, wherein the determined new transmission speed is a new transmission speed that the transmission information indicates that the linked network device is capable of performing.

31. (Previously Presented) The storage device of claim 23, further comprising code capable of causing the local network device to set a register in the local network device to indicate the new transmission speed and wherein the code comprises a device driver to communicate with the local network device to determine the new transmission speed, wherein to set the register in the local network device comprises the device driver changing advertised capabilities of the local network device indicated in the register, and wherein transmitting the speed change request comprises restarting an auto-negotiation process that selects a common transmission speed based on the changed advertised capabilities in the local network device.

32. (Previously Presented) The storage device of claim 31, wherein the determined new transmission speed is higher than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in the advertised capabilities of the local network device that are less than the determined new transmission speed.

33. (Previously Presented) The storage device of claim 31, wherein the determined new transmission speed is lower than the current transmission speed, and wherein changing the advertised capabilities comprises removing any transmission speeds indicated in

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the advertised capabilities of the local network device that are higher than the determined new transmission speed.

34. (Previously Presented) The storage device of claim 23, wherein the speed change event comprises an application program determining an anticipated increase of data transmissions through the local network device, and wherein the new transmission speed is higher than the current transmission speed.

35. (Previously Presented) The storage device of claim 23, wherein the speed change event comprises detecting a change in network traffic at the local network device.

36. (Previously Presented) The method of claim 1, wherein the speed change event is based on a change in desired power consumption.

37. (Previously Presented) The method of claim 1, wherein the speed change event is based on a detected change in network conditions.

38. (Previously Presented) The method of claim 1, wherein the local and linked network devices interact based on the speed change request at the current transmission speed.

39. (Previously Presented) The network device of claim 14, wherein the speed change event is based on a change in desired power consumption.

40. (Previously Presented) The network device of claim 14, wherein the speed change event is based on a detected change in network conditions.

41. (Previously Presented) The network device of claim 14, wherein the network device and the linked network device interact based on the speed change request at the current transmission speed.

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42. (Previously Presented) The computer system of claim 21, wherein the speed change event is based on a change in desired power consumption.

43. (Previously Presented) The computer system of claim 21, wherein the speed change event is based on a detected change in network conditions.

44. (Previously Presented) The computer system of claim 21, wherein the network device and the linked network device interact based on the speed change request at the current transmission speed.

45. (Previously Presented) The article of manufacture of claim 23, wherein the speed change event is based on a change in desired power consumption.

46. (Previously Presented) The article of manufacture of claim 23, wherein the speed change event is based on a detected change in network conditions.

47. (Previously Presented) The article of manufacture of claim 23, wherein the local and linked network devices interact based on the speed change request at the current transmission speed.

48. (Previously Presented) A system comprising:

a linked device; and

a local device comprising:

logic to initiate an operation to change a current transmission speed at which data is transmitted to the linked device in response to a speed change event,

logic to determine a new transmission speed different from a current transmission speed between the local device and the linked device, and

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logic to transmit a speed change request and the new transmission speed to the linked device to request the linked device to communicate at the new transmission speed, wherein the transmission occurs while maintaining a linked exchange between the local device and the linked device.

49. (Previously Presented) The system of claim 48, wherein the local and linked network devices interact based on the speed change request at the current transmission speed.

50. (Previously Presented) The system of claim 48, wherein the transmission occurs at the current transmission speed.

51. (Previously Presented) The system of claim 48, wherein the speed change event is based on a change in desired power consumption.

52. (Previously Presented) The system of claim 48, wherein the speed change event is based on a detected change in network conditions.